

## **ARTICLE VI**

### **MINIMUM DESIGN STANDARDS**

#### **SECTION 1. GENERAL GUIDELINES:**

1. In addition to the requirements established herein, all subdivision plats shall comply with all applicable ordinances of the City, and all City policy documents, including all streets, drainage systems and parks shown on the land use plan or other officially adopted plan; any rules of the local health department and/or the state department of health; the rules of the state department of transportation if the subdivision or any lot contained therein abuts a state highway or connecting street; the standards and regulations adopted by the City engineer, and all boards, commissions, agencies, and officials of the City and County.
2. Whenever County, State or other applicable regulations impose more restrictive standards and requirements than those outlined herein, the more restrictive regulations shall control.
3. Subdivision plats shall conform to the following general guidelines:
  - a. All portions of a tract being subdivided, unless otherwise permitted, shall be designed as lots, streets, planned open spaces, or other uses to avoid creation of vacant landlocked spaces.
  - b. Subdivisions and land developments shall be laid out so as to avoid the necessity for excessive cut and fill.
  - c. Whenever possible, developers shall preserve trees, groves, waterways, scenic points, historic sites, and other local assets and landmarks.
  - d. Land subject to flooding or other hazards to life, health, or property, and land deemed to be unsuitable from the standpoint of geology, soil conditions, or topography, shall not be platted for residential occupancy or other such purposes as may increase danger to health, life, or property, nor aggravate erosion or flood hazard, unless all such hazards are properly mitigated through the subdivision planning process, as hereinafter provided.
  - e. All subdivisions shall have frontage on and have direct access to a public right-of-way.

#### **SECTION 2. PUBLIC FACILITY REQUIREMENTS:**

1. In reviewing subdivision plans, the Planning Commission will consider the adequacy of existing or proposed facilities to serve the additional dwellings proposed by the subdivision.

2. Where deemed essential by the Planning Commission, upon consideration of the particular type of development proposed and especially in large scale residential developments, the Planning Commission may require the dedication or reservation of such areas or sites of an extent and location suitable to the needs created by the development.
3. Areas provided for or reserved for such community facilities shall be adequate to provide for building sites, landscaping, and off-street parking, as appropriate to the use proposed.
4. Areas set aside for recreational purposes, such as playgrounds in manufactured home parks, shall be of adequate size and configuration to accommodate the intended use. They should be so located as to serve all the residents, and in large developments, more than one such area may be required to serve the residents in close proximity to their dwellings.

### **SECTION 3. CHARACTER OF THE LAND:**

1. Land which the Planning Commission finds to be unsuitable for subdivision or development, due to flooding, improper drainage, steep slopes, rock formation, adverse earth formations or topography, utility easements, or other features which will reasonably be harmful to the safety, health, and general welfare of inhabitants of the land and surrounding areas shall not be subdivided or developed unless adequate methods are formulated by the developer and approved by the Planning Commission to solve the problems created by the unsuitable land conditions.
2. No land subject to a flood having a chance occurrence in any one year of one percent, including, but not limited to, areas identified by the Federal Flood Insurance Administration as having special flood hazards, shall be subdivided for residential use or any other use which would be incompatible with such flooding except as provided below:
  - a. Land subject to periodic flooding, or which has inadequate drainage, may be subdivided only if improvements or structures are designed by an engineer so as to assure adequate flood proofing. Proposals for subdivision of land in such areas shall include engineering evidence that the proposed development will:
    - (1) Not unduly restrict or block the conveyance of flood water.
    - (2) Not result in an increase in height of the flood water of more than one (1) foot.
    - (3) Require residential structures to have the lowest floor (including basement) to be at least one (1) foot above such flood level or non-residential structures to be elevated or flood-proofed to at least one (1) foot above such flood level.
    - (4) Meet all zoning requirements for identified flood hazard areas.

- b. New or replacement water supply and/or sanitary sewer systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters. It is also required that on-site sewage disposal systems shall be located so as to avoid their impairment or contamination during flooding.
3. Proposals for development of land subject to excessive erosion by the forces of wind and/or water shall include necessary preventive measures as a part of the subdivision platting process. Conservation standards endorsed by the Sedgwick County Conservation District shall be incorporated as appropriate.

**SECTION 4. STREETS, ALLEYS, AND PUBLIC WAYS:**

1. The arrangement, character, extent, width, grade, and location of all streets shall conform to the intent of the Comprehensive Plan, and shall be considered in their relation to existing and planned streets; to reasonable circulation of traffic within the subdivision and adjoining lands; to topographical conditions; to the runoff of storm water; to public convenience and safety; and in their appropriate relations to the proposed uses of the land to be served by such streets.
2. Streets shall be logically related to topography so as to produce reasonable grades, satisfactory drainage, and suitable building sites.
3. Dead end streets shall be prohibited, except as stubs, to permit future street extensions into adjoining tracts or when designed as cul-de-sacs with turnaround provisions.
4. Stub streets, greater in length than one lot depth, shall be provided with a temporary turnaround to the standards required for cul-de-sacs, or shall be paved to the full width of the right-of-way for the last fifty (50) feet of their length.
5. Streets that are obviously in alignment with other already existing and named streets shall bear the names of the existing streets. Street names should not be similar to already platted street names.
6. Arterial streets through subdivisions shall conform to the major street plan of the Comprehensive Plan as adopted by the Planning Commission and the Governing Body.
7. Local streets should be designed so as to discourage through or non-local traffic. Local streets should not intersect arterial streets.
8. Cul-de-sacs shall meet the following minimum standards:
  - a. The maximum length of a cul-de-sac street shall be five hundred (500) feet, but a length of up to one thousand (1,000) feet may be approved by the Planning Commission if conditions warrant.

- b. Cul-de-sacs shall have at the closed end a turnaround with a right-of-way having a minimum outside radius of not less than one hundred (100) feet and shall be surfaced to a radius of not less than fifty (50) feet.
  - c. Drainage of a cul-de-sac shall preferably be toward the open end.
9. Where lots front or side, but do not back, on railroad rights-of-way, major streets, or highways, a marginal access street, or frontage road shall be provided, parallel and adjacent to the boundary of such right-of-way. The distance of the street from said right-of-way shall be determined with due consideration given to minimum distance required for approach connections to future grade separations or intersections. The right-of-way of such frontage road shall be sixty (60) feet, unless otherwise approved.
10. The Planning Commission may recommend to the City Council that the requirement for a frontage road be waived if:
- a. Existing physical conditions make it improbable that a frontage road would be constructed.
  - b. A hardship is created and the full use of the property cannot be obtained for lots or tracts that existed prior to the effective date of this Resolution.
11. Dedication of half-streets will not be approved, except where it is essential to the reasonable development of the subdivision and is in conformity with the approved major street plan and other requirements of these regulations. In addition, satisfactory assurance that dedication of the remaining part of the street will occur in a reasonable length of time will be required.
12. All streets, alleys, and public ways included in any subdivision, hereafter dedicated and accepted, shall be not less than the minimum dimensions for each classification as follows:

	MINIMUM RIGHT-OF-WAY <u>WIDTH</u>	MAXIMUM <u>GRADE</u>
Major Streets:		
Arterials	100 feet	6%
Collectors	80 feet	8%
Local Streets:		
Residential	60 feet	10%
Industrial & Commercial	80 feet	6%
Cul-de-sacs	60 foot radius on turn-around	
Marginal Access Streets or Frontage Roads:		
Two-Way	50 feet	10%
One-Way 50 feet	10%	
Alleys	20 feet	10%
Pedestrian Ways	10 feet	

13. These minimum dimensions may be modified by the City, as necessary, to allow for special conditions such as parallel drainage and roadway systems, utility requirements, provision for pedestrian movement, grade problems, intersection design, and similar considerations in the process of establishing a safe and efficient street system.
14. To insure proper street layout and function, street alignment shall conform to the following:

- a. Whenever street lines are deflected in excess of five (5) degrees, connection shall be made by horizontal curves.
- b. Residential streets should approach major streets at an angle of not less than eighty (80) degrees or more than one hundred (100) degrees.
- c. Wherever possible, there shall be an inside tangent at least one hundred (100) feet in length between reverse curves on arterial and collector streets.
- d. Streets shall be laid out so as to provide for horizontal sight distances on all curves depending upon design speed. These distances shall be:

Horizontal

Arterial Streets:	500 feet
Collector Streets:	300 feet
Local Streets:	200 feet

Vertical

Arterial Streets:	350 feet
Collector Streets:	300 feet
Local Streets:	200 feet

The sight distance shall be measured within street rights-of-way from a height of four-and one-half (4-1/2) feet above the proposed pavement surface in the right-hand lane of the roadway.

- e. Street jogs should be avoided on arterial and collector streets. On local streets, centerline offsets of less than 150 feet should be avoided.
- f. Multiple street intersection involving junction of more than two (2) streets shall be avoided. Where this proves impossible, such intersection shall be designed with extreme care for both pedestrian and vehicular safety.
15. Street and roadway grades should not exceed the following recommended standards:
  - a. Centerline grades should not be less than one (1) percent.
  - b. The maximum street grades for residential streets should be no greater than ten (10) percent.

16. No street names shall be used which will duplicate or be confused with the names of existing streets. Existing street names shall be used where they are or would be logical extensions of existing streets even though separated by undeveloped land.
17. Clear sight triangles of ninety (90) feet measured along the street centerlines from their points of junction shall be provided at all intersections, and no obstruction shall be higher than two and one-half (2½) feet above the grades of the bottom of the curb of the intersecting streets within the sight triangle.
18. Alleys shall conform with the following standards:
  - a. Alleys shall be provided in commercial and industrial areas, except that the Planning Commission may recommend waiving this requirement where other definite and assured provision is made for service access, such as off-street loading, unloading, and parking spaces consistent and adequate for the uses proposed. Alleys in residential districts are optional, unless recommended by the Planning Commission.
  - b. When provided, the minimum width of an alley shall be twenty (20) feet.
  - c. Alley intersections and sharp changes in alignment shall be avoided, but where necessary, a turning radius shall be provided to permit safe vehicular movement.
  - d. Dead end alleys shall be avoided where possible, but if unavoidable, such alleys shall be provided with adequate turnaround facilities at the dead end.
19. Where alleys are not provided, permanent easements of not less than ten (10) feet in width shall be provided on all rear lot lines, and on side lot lines where necessary, for utility poles, wires, and conduits; sanitary sewers; gas, water, and heat mains; and other public utilities and drainage requirements.
  - a. A twelve (12) foot temporary construction easement shall be provided on each side of the permanent easement required above for initial construction of water, sewer, and other utility lines.
  - b. Where a lot or group of lots side or back on an existing high pressure oil line or existing high pressure gas line, a seventy-five (75) foot easement shall be provided on each side of said oil line or gas line. The seventy-five (75) foot easement shall be provided on that part of the lot which abuts the oil line or gas line and no building or structure shall be located or constructed within said seventy-five (75) foot easement.
20. If a subdivision is traversed by a watercourse, drainageway, or channel, a storm water easement or drainage right-of-way shall be provided. Such easement or right-of-way shall conform substantially to the lines of such watercourse and shall be of such width or construction, or both, as may be necessary to provide adequate storm water drainage and for access for maintenance purposes.

**SECTION 5. BLOCKS:**

1. The length, width, and shape of blocks shall be determined with due regard to the following:
  - a. Provision of adequate sites for type of buildings proposed.
  - b. Zoning requirements as to lot size, dimension, and minimum lot area per dwelling unit.
  - c. The limitations and opportunities of the topography.
  - d. Requirements for safe and convenient vehicular and pedestrian circulation and access.
  - e. The limitations and characteristics of the soil and slope relative to the requirements for the installation of utilities, including any unusual requirements for septic lateral fields, package processing plants, or sewage holding lagoons.
2. Blocks should not exceed one thousand three hundred twenty (1,320) feet in length unless topographic conditions justify a variation. In general, blocks shall not be less than three hundred (300) feet unless necessary because of existing street patterns.
3. All blocks shall be so designed so as to provide two tiers of lots, unless a different arrangement is required in order to comply with or be permitted by other sections of these regulations.
4. Blocks may be irregular in shape, provided they are harmonious with the overall pattern of blocks in the proposed subdivision.
5. In extra long blocks, a public pedestrian way may be required to provide access to public or private facilities such as schools or parks.

**SECTION 6. LOTS:**

1. Lot size, width, depth, shape and orientation, and minimum building setback lines shall be appropriate for the location of the subdivision and for the type of development and use contemplated.
2. Lot dimensions shall conform to the minimum standards of any applicable zoning regulations or sanitary code based on availability of a public water supply and/or a public sewer system, unless higher standards are required in accordance with these regulations.
3. Minimum lot width shall be measured at the building setback line; however, in no case shall the lot width be less than fifty (50) feet at the front property line. In addition, corner lots should have a width fifteen (15) feet greater than the minimum width.

4. Minimum lot depth shall be 100 feet. (Said measurement shall be made through the center of the lot and shall be perpendicular to the property line or radial to the property line on curved streets).
5. As a general guideline, the maximum depth of lots shall not exceed two-and one-half (2-1/2) times the width thereof.
6. There shall be no double frontage lots except where the lots abut upon a limited access highway or arterial street or where the topography of the land prevents reasonable subdivision otherwise.
7. Corner lots shall have extra width where necessary to permit appropriate building setback from and orientation to both streets.
8. Side lines of lots shall be at right angles or radial to the street line, or substantially so.
9. Residential lots shall front on a residential street, existing or proposed, and this requirement shall not be satisfied by providing an access easement to the street.

#### **SECTION 7. SUBDIVISION DESIGN**

1. In the interest of public safety and for the preservation of the traffic-carrying capacity of the street system, the Planning Commission and Governing Body shall have the right to restrict and regulate points of access to all property from the public street system.
2. The design of the subdivision shall provide for efficient traffic flow, proper mixing of land uses, and a logical link between surrounding, existing development, and the proposed layout. The Comprehensive Plan should be used as a guide in determining if the design of the proposed subdivision is proper. The Planning Commission shall have the authority to deny a plat or request redesign, if, in its opinion, the layout is not suitable for the site, or if the development of the subdivision would be premature.
3. The sub-divider may be required to have an engineer's study prepared to determine the amount of increased storm water runoff that will be created by the proposed development and a plan of how this runoff will be accommodated. The City may require design modification of the proposed storm water system to reduce increased runoff.
4. Where appropriate, conservation of energy through the use of both passive and active solar systems is encouraged. To accommodate solar design, streets in residential subdivisions should, where possible, have an east-west alignment. Lots intended for detached dwellings should be of sufficient width to allow the structure to be built with its longest axis running east-west.
5. Any sub-divider may grant or establish a solar skyspace easement to protect solar energy systems from being shaded. The easements shall be created in writing and shall be recorded separately or be written on the face of the plat. Any such easements shall be written to run with the land.